



## **CHEMISTRY NMDCAT**

(UNIT-4)

### www.saeedmdcat.com

### SAEED MDCAT

CALLE WEST							
03418729745(WhatsApp Groups)							
TOPICS	The second secon						
	✓ CHEMICAL EQUILIBRIUM						
0.4	✓ CHEMICAL KINETICS						
Q.1	Ionization of phenol can be decreased by						
	a. Methanol c. Toluene	b. Hydrochloric acid d. Benzyl alcohol					
0.0							
Q.2	Self-ionization of water is H-OH $\parallel H^+ + OH^-$ . If strong base is added to water at						
	given temperature, water will be basic and its K <sub>c</sub> will a. Increase b. First increase and then constant						
	c. Decrease	d. Remain constant					
Q.3		ion of ions at particular temperature, then					
£	solution is						
	a. Saturated b. Unsaturated						
	c. Supersaturated	d. Concentrated					
Q.4		equilibrium concentrations of acetic acid,					
	ethanol, ethyl acetate and water are 1.5M						
	CH <sub>3</sub> COOH + CH <sub>3</sub> CH <sub>2</sub> OH CH <sub>3</sub> CO						
	a. 10	b. 4.5					
0.5	c. 1	d. 2.77					
Q.5	An addition of NH <sub>4</sub> Cl in N <mark>H<sub>4</sub>OH solution</mark>						
	a. Cl <sub>(aq)</sub>	b. $OH_{(aq)}^-$					
	B) NH <sub>4</sub>	d. Both $Cl_{(aq)}^-$ and $OH_{(aq)}^-$					
Q.6	pK <sub>a</sub> values of four acids are given. Find the stronger one						
	a. 0	b. 9					
	c. 3	d. 1					
Q.7	The order of reaction may be determined						
	a. Differential	b. Graphical method					
0.0	c. Half-life method	d. All of these when initial concentrations of reactants are					
Q.8	doubled. The order of the reaction will be						
	a. First order	b. Third order					
	c. Second order	d. Zero order					
Q.9	Which change will never happens to a ca						
0.40		vsical state					
Q.10	Yield of ammonia in Haber's process can						
	a. Decreasing temperature c. Adding catalyst	b. Adding nitrogen  d. Increasing pressure					
Q.11							
Q.11	1 If number of moles of reactants are greater than products, then relationship between K <sub>n</sub> and K <sub>c</sub> is						
	a. $K_n > K_c$ The first $T$ The $T$	b. $K_n = K_c$					
	$c. K_p > K_c$	d. $K_{\rm p} < K_{\rm c}$					
Q.12	In Arrhenius equation $k = Ae^{-Ea/RT}$ .	depends upon collision frequency					
	a. k	b. e					
0.12	c. A	d. Ea					
Q.13	a. Enthalpy of reaction  b. Activation energy						
	c. Kinetic energy	b. Activation energy d. Internal energy					
Q.14	In the hydrolysis of an organic chloride in the presence of large excess of water						
Z	$R_3C-Cl + H_2O \rightarrow R_3C-OH + HCl$ , order of reaction is						
	a. Second order b. Third order						
	c. First order d. Pseudo First order						
Q.15	The mechanism below has been proposed fo						
	Step 1: $Cl_{2(g)} = 2Cl_{(g)}$	fast					





```
Step 2:
                        Cl_{(g)} + CHCl_{3(g)} =
                                              \rightarrow CCl_{3(g)} + HCl_{(g)}
                                                                         slow
        Step 3:
                        CCl_{3(p)} + Cl_{(p)} \longrightarrow CCl_{4(g)}
                                                                         fast
        Rate law for the reaction is
        a. Rate = [CHCl_3][Cl]
                                                        b. Rate = [CCl_3][Cl]
       c. Rate = [CHCl_3][Cl_2]^{1/2}
                                                        d. Rate = [Cl_2]
Q.16 All are correct about zero order except
        a. All photochemical reactions are zero order
        c. Rate is independent of concentration of reactant
        b. Radioactive decay follows zero order
        d. Half-life is directly proportional to initial concentration raised to power (1-n)
Q.17 If during reaction, there is rotation in plane polarized light, then its rate can be
       determined by
        a. Spectrometry method
                                                        b. Optical rotation method
        c. Electrical conductivity method
                                                        d. Dilatometric method
       Autocatalysis is the phenomenon in which product formed acts as catalyst, which is
        autocatalyst in the following reaction
        2KMnO_4 + 3H_2SO_4 + 5(COOH)_2 \longrightarrow K_2SO_4 + 2MnSO_4 + 5CO_2 + 8H_2O
        a. K_2SO_4
                                                        b. CO<sub>2</sub>
        c. Mn
                                                        d. H<sub>2</sub>O
       1.0g mole of ethyl alcohol and 1.0g mole of acetic acid are mixed. At equilibrium
        0.666g mole of the ester is present. The value of equilibrium constant is
                                                        c. 2
                                                        d. 4
Q.20
       For third order reaction, rate constant has units
                                                        b. mol<sup>-1</sup>dm<sup>3</sup>s
        a. moldm<sup>-3</sup>s
                                                        d. \text{ mol}^{-2} dm^{+6} s^{-1}
                                                                Rate = k [X]^0 [Y]^2
                                      X + 2Y \rightarrow Z
Q.21
      For a reaction like
        If concentration of X and Y is doubled, then rate of reaction will increase
        a. 8 times
                                                        b. 4 times
        c. 6 times
                                                        d. 16 times
Q.22 CH_3COOC_2H_5 + H_2O = CH_3COOH + C_2H_5OH
        Unit of rate of this reaction is
                                                b. mol dm^3 s^{-1}
        a. mol dm<sup>-3</sup>s
       c.s
                                                        d. No units
Q.23 pH of buffer in which concentrations of salt and base are 0.1M and 0.01M
        respectively (pK_h = 4.0)
                                                        b. 9.0
        a. 3.0
        c. 2.0
                                                        d. 11.0
Q.24 K_{sp} for following can be written as PbCl_2 = Pb^{+2} + 2Cl^{-1}
                                                        b. [Pb<sup>+2</sup>] [2Cl<sup>-</sup>]<sup>2</sup>
d. [Pb<sup>+2</sup>] [Cl<sup>-</sup>]
       a. [Pb<sup>+2</sup>] [Cl<sup>-</sup>]<sup>2</sup>
c. [Pb<sup>+2</sup>] + [Cl<sup>-</sup>]<sup>2</sup>
0.25
       Slowest step in the reaction is called
                                                        b. Rate determining step
        a. Elementary step
        c. Rate law
                                                        d. Order of reaction
0.26
       In a reaction, A + B \rightarrow Product, rate is doubled when the concentration of B is
        doubled, and rate increases by a factor of 8 when the concentrations of both the
        reactants (A and c. are doubled, rate law for the reaction can be written as
       a. Rate = k [A][B]
c. Rate = k [A]^2[B]
                                                        b. Rate = k [A]^3 [B]
                                                        d. Rate = k [A][B]
Q.27 For solubility product of solutions, solubility of salt may be equal to or less than
        a. 0.01M
                                                        b. 0.05M
                                                        d. 0.1M
       The rate of a chemical reaction doubles for every 10°C rise of temperature. If the
        temperature is raised by 50°C, the rate of the reaction increases by about
        a. 16
                                                        b. 32
        c. 64
                                                        d. 08
Q.29 Rate of exothermic reaction is increased by increasing all except
        a. Temperature
                                                        b. Volume of vessel
        c. Surface area of reactants
                                                        d. Concentration of reactants
       A catalyst works by
        a. Decreasing activation energy
                                                        b. Forming stable transition state
```





		(2)(4)				
Q.31	c. Providing alternate pathway d. All of these A certain reaction has the rate equation, Rate = $k[A][B]^2$ . The rate is 2.5x10 <sup>-3</sup> mol dm <sup>-3</sup> s <sup>-1</sup> . When [A] is 0.2 mol dm <sup>-3</sup> and [B] is 0.050 mol dm <sup>-3</sup> . Calculate the numerical value of rate constant					
	a. 50 c. 5.0	b. 2 d. 0.05				
Q.32	Half-life of certain reaction decreases vertain is a. Zero order	with decrease in concentration. Order of b. Second order				
	c. First order	d. Third order				
Q.33	Following is an exothermic reaction A+B \( \begin{align*} \text{C+D.} \\ \text{Which is correct statement?} \) a. Rate of reaction will increase by increasing temperature c. Yield of C can be increased by increasing pressure b. Rate of reaction will decrease by increasing temperature d. Rate is not affected by adding catalyst					
Q.34	pOH values of four bases are given. Whic a. 12 c. 13	h is stronger one b. 1 d. 6				
Q.35	For the gas phase reaction $2X + Y^{\hat{1}} \hat{7}$					
Qiec	yield of Z at equilibrium could be increase					
	a. Increasing the pressure	b. Increasing the temperature				
	c. Using a catalyst	d. Increasing the volume				
Q.36	The solubility product of Ag <sub>2</sub> CrO <sub>4</sub> is	$3.2 \times 10^{-2}$ at $25^{\circ}$ C. The solubility of the				
	compound is	3				
		b. $2.0 \times 10^{-2}$ mol dm <sup>-3</sup>				
0.27	c. $1.501 \times 10^{-1} \text{ mol dm}^{-3}$	d. 1.866×10 <sup>-1</sup> mol dm <sup>-3</sup>				
Q.37	Which of the following species is conjugate base of H <sub>2</sub> CO <sub>3</sub>					
	a. CO <sub>3</sub> <sup>2-</sup>	b. CO <sub>2</sub>				
	c. CO	d. HCO <sub>3</sub>				
Q.38	Which statement is incorrect					
	a. Enzymes are biological catalyst	b. Enzymes can be crystallized				
Q.39	c. Enzymes are highly specific  The specific rate constant for a reaction is 1.0	2.10 <sup>-4</sup> mol dm <sup>-3</sup> s <sup>-1</sup> the order of reaction is				
2.03	a. Zero	b. First				
	c. Second	d. Third				
Q.40	By increasing temperature of water, its plana. Increase and water will be more acidic c. Decrease and water will remain neutral b. Decrease and water will be more acidic d. No effect of temperature on pH	H will				
Q.41	( <b>am</b> )	cid solution having pH of 4				
		b. 10 <sup>-4</sup> d. 10 <sup>-10</sup>				
Q.42	If for a reaction $A + B = \begin{pmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$ $C + D = K$	$t_c = 2.0$ then rate constant of forward reaction				
Q.43		b. 0.5 d. 2.5 $ (E_{a_r}) \ \ \text{is 75 kJmol}^{-1} \ \text{and activation energy} $				
Q.43		/				
	( - /	. What will be enthalpy change for this				
0.44		b25 KJmol <sup>-1</sup> d125 KJmol <sup>-1</sup>				
Q.44	$\boldsymbol{K_C}$ value indicates that the chemical reaction $a.~10^{-3}$ $c.~10^{15}$	b. 10 <sup>3</sup> d. 10 <sup>10</sup>				
Q.45	For the following equilibrium which is true $\ell L \times mM = 0$ $sS + tT$					
	a. $Kc = [S]^s [T]^t / [L]^{\ell} [M]^m$	$b. \ Kp = \frac{P_S^{\delta} P_T^{\iota}}{P_L^{\ell} P_M^{m}}$				





 $c. Kc = \frac{C_S^s C_T^t}{C_L^\ell C_M^m}$ 

d. All of these

# SAEED MDCAT SAEED MDCAT TEAM SAEEDMDCAT SAEEDMDCAT





Q.46 In the following reaction the white ppt i-e artificial milk (BiOCl) disappears when

 $BiCl_3 + H_2O \square \square$  BiOCl + 2HCl

a. More HCl is addedc. More water is added

b. More BiCl<sub>3</sub> is added d. Frequent removal of HCl

Q.47 Which combination produces buffer solution at pH < 7 by partial neutralization with aqueous NaOH

a. 0.01 M HI

b. 0.01M CH<sub>3</sub>COOH

c. 0.01M HCl

d. 0.01M H<sub>2</sub>SO<sub>4</sub>

Q.48 Which statement is incorrect

- a. Conjugate base of a very weak acid is relatively very strong base
- c. Conjugate acid of a very weak base is relatively very strong acid
- b. Greater is the percentage ionization stronger is the base
- d. Greater is pK<sub>b</sub> value stronger is the base
- Q.49 For which system the equilibrium constant  $K_C$  has units of (concentration)<sup>+2</sup>

a.  $2HF = H_2 + F_2$ 

b.  $2NH_3 = N_2 + 3H_2$ 

c.  $2NO_2$   $\square$   $N_2O_4$ 

d. PCl<sub>5</sub> PCl<sub>3</sub> + Cl<sub>2</sub>

 $\mathbf{Kc} = \frac{\mathbf{x}^2}{\mathbf{x}^2}$ 

Q.50 V(a-x) is true for

a.  $2NO_2 \square \square \square N_2O_4$ 

c. H<sub>2</sub> + I<sub>2</sub> | | | H 2HI

b.  $PCl_5 \blacksquare \bigoplus PCl_3 + Cl_2$ 

d.  $CH_3COOC_2H_5 + H_2O$ 

For More Test And Lecture , Visit Our Official Website www.saeedmdcat.com

And Must be Join Our WhatsApp Group(03418729745)

## SAEED MDCAT TEAM SAEED MDCAT TEAM SAEED MDCAT TEAM

		CTS-	T+		
		Phy	sies		
7	1-p	11-B	21- A	31-0	91-10
	2-6	17-0	77-A	32 0	92-9
	3.0	13- 0	23 - A	33 4)	45-Q
	4-0	14 - wrong	24-1	34-G	44-6
	5-D	15-C	25 A	31 -13	45-B
	6-0	16-A	26-0	36-C	46 C
	7-A	17-C	27-12	37-8	41-0
	8- C	18 B	28-8	38- 0	48 B
	9 - B	19-4	29-A	39-A	49-6
	10-6	20-D	30 - B	40-B	50-B
	10-0	20			
		Chen	nistry		
	1-8	11- D	21-B	31- C	41- B
	2-D	12 - C	22-A	32-A	42 - A
	3 - A	13-8	23-B	33 - A	43- A
	4-D	14-D	24-A	34 - B	44-C
	5-B	15 C	25-8	35 - A	45 D
	6- A	16-8	26-C	36-A	46- A
	7-D	17-8	27- A	37- D	47-B
	8-C		28-B	38-D	48- D
	9-0	19-D	29-B	39- A	41-B
	,	20 - 0	30.0	40-0	56-13